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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|--------------------|
| 10/086,074 | 02/26/2002 | Tetsuo Kuwabara | 1232-4830 | 1418 |
| 27123 | 7590 | 01/05/2004 | | EXAMINER |
| MORGAN & FINNEGANT, L.L.P. 345 PARK AVENUE NEW YORK, NY 10154 | | | | NGUYEN, NGOC YEN M |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1754 | |

DATE MAILED: 01/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|--------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/086,074 | KUWABARA, TETSUO |
| | Examiner | Art Unit |
| | Ngoc-Yen M. Nguyen | 1754 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 17 October 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) 2-11 and 15-17 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1 and 12-14 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) The translation of the foreign language provisional application has been received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) Interview Summary (PTO-413) Paper No(s) _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____.

DETAILED ACTION

Applicant's election with traverse of Group I in Paper filed October 27, 2003 is acknowledged. The traversal is on the ground(s) that all groups of restricted claims are properly presented in the same application and undue diverse searching would not be required. This is not found persuasive because the reasons why the claimed inventions are considered distinct were clearly stated in the previous office action and applicants have not pointed out any specific error in these reasons, and because there is burden to search addition groups because each group requires different field of search.

The requirement is still deemed proper and is therefore made FINAL.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. For examples, page 12, line 20 " (AnF_2) " should be changed to " (ZnF_2) ", page 17, line 5, mesh table "320" should be changed to "310".

Claims 13-14 are objected to because of the following informalities: Applicants are requested to incorporate the limitations of the dependent claims and any intervening claims into claims 13-14 since claims 2-11 are non-elected claims and withdrawn from consideration . Appropriate correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 12-14 are rejected under 35 U.S.C. 102(a or e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Oba et al (6,342,312).

Oba '312 discloses a process for producing calcium fluoride crystal. Raw calcium fluoride powder and a scavenger are mixed. Examples of preferable scavengers include Zn fluoride, Bi fluoride, Na fluoride and Li fluoride (note column 6, lines 16-36). The mixture of calcium fluoride and the scavenger is subjected to a purification step and the purified mixture is then subjected to a growing step, followed by an annealing step, a shaping step (note column 6, line 37- column 7, line 58 and Figure 2).

The amount of the scavenger preferably ranges from 0.05 mol% to 5.00 mol% (note column 12, lines 12-13).

As disclosed in the instant specification, page 6, line 22 to page 7, line 9, because the quantities of scavenger used in the claimed invention, i.e. 0.001 mol% to 0.1 mol%, causes smaller residue of scavenger, impurities contained in the CaF₂ crystal and crystal defect (particularly, transition defect) are reduced, such that the provision of quality of CaF₂ is enabled and page 11, lines 13-14, crystal defect is disclosed as being the same as transition density.

Oba '312 does not specifically disclose the transition density or the dispersion of transition density of the calcium fluoride product, however, since Oba '312 uses the same amount of scavenger in the purification step as in the claimed invention, (it should be noted that the lower value 0.05 mol% as disclosed in the Oba '312, for the amount of scavenger used, is well within the disclosed range on page 6 of the instant specification), the product of Oba '312 would inherently have the same properties as the claimed product, including the transition density and the dispersion of transition density.

The product of Oba '312 anticipates the claimed product.

Alternatively, for the product by process limitations, any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see In re Brown, 173 U.S.P.Q 685, and In re Fessmann, 180 U.S.P.Q. 324.

Claims 1, 12-14 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sakuma et al (6,377,332).

Sakuma '332 discloses an optical member for photolithography made of a calcium fluoride crystal exhibiting an internal transmittance of 99.5%/cm or greater with respect to light emitted from an F₂ laser (i.e., 157 nm) (note claim 1).

From Table 1, the internal transmittance can be as high as 99.9 +/- 0.3 or 99.8 +/- 0.2. In the process of Sakuma '332, fluorinating agent such as lead fluoride is considered the same as the scavenger as disclosed in the claimed invention.

Sakuma '332 does not specifically disclose the transition density or the dispersion of transition density, however, since the product of Sakuma '332 is subjected to a purification step using a scavenger as in the claimed invention and since the product of Sakuma '332 has high internal transmittance as that of the claimed product, the transition density and the dispersion of transition density of the product of Sakuma '332 would inherently be the same as those of the claimed product.

The product of Sakuma '332 anticipates the claimed product.

Alternatively, for the product by process limitation, see *In re Fessmann*, *In re Brown* as stated above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Ngoc-Yen Nguyen
Ngoc-Yen M. Nguyen
Primary Examiner
Art Unit 1754

nmm
12/29/03